UNITED STATES DISTRICT COURT
FOR THE WESTERN DISTRICT OF TEXAS
WACO DIVISION

Midas Green Technologies, LLC,	
Plaintiff,	Civil Action No. 6:24-cv-00166-ADA
- vs. -	**Jury Trial Demanded**
Green Revolution Cooling, Inc.	
Defendant	

PRELIMINARY INFRINGEMENT CONTENTIONS

Pursuant to the Court's Standing Order Governing Proceedings (OGP) 4.4—Patent Cases, General Deadlines, paragraph 2, Plaintiff Midas Green Technologies, LLC ("Midas") hereby serves these preliminary infringement contentions and related items.

1. Green Revolution Cooling, Inc. ("GRC"), by its making, having made, using and/or selling its ICEraQ10 and HashRaQ Max products (the "Accused Products") infringes at least claims 1, 2, 3 and 6 of U.S. Patent No. 10,405,457 (the "'457 Patent"). Pursuant to 35 U.S.C. §271(a), GRC has directly infringed claims 1, 2, 3 and 6 of the '457 Patent. GRC has both past infringement and on-going infringement of the '457 Patent.
2. The '457 Patent was duly and legally issued on September 3, 2019 by the U.S. Patent and Trademark Office. The underlying application, U.S. Patent Application No. 14/355,533, was filed on April 30, 2014. The underlying PCT application was filed on December 13, 2013, which claims priority to US provisional application No. 61/737,200 (filed December 14, 2012) and to US provisional application No. 61/832,211 (filed June 7, 2013). The USPTO extended the term of the '457 Patent by 680 days.

EXHIBIT
3

exhibitsticker.com

3. A petition to correct inventorship for the '457 Patent is currently pending at the USPTO, which amends inventorship to indicate that Chris Boyd is the sole inventor of the '457 Patent claims. Chris Boyd conceived of the invention claimed in the '457 Patent at least as early as March 14, 2012, and Midas proceeded diligently to file US provisional application No. 61/832,211 on June 7, 2013. As the '457 Patent has an effective filing date of March 14, 2021, which is prior to March 16, 2013, Pre-AIA regarding 35 USC §102 applies.
4. Identify the priority date (i.e. the earliest date of invention) for each asserted claim: As presently understood, the priority date (earliest date of invention) for all asserted claims is at least as early as March 14, 2012, and all asserted claims are entitled to a priority date (effective filing date) of December 14, 2012.
5. Midas makes and sells products that practice the asserted claims of the '457 Patent. These products include at least the following products and models:

Product	**Description**	**Manufacturer or Provider**
XCIT4-50RM	50U v4 Redundant	Midas
XCIC4-50C	50U v4 Tier 0	Midas
XCI4S-A-3	12U v4 Air Cooling Module 3kW	Midas
XCI4S-W-12	12U v4 Water Cooling Module 12kW	Midas
XCIC-480-400	Self-Contained 400kW Compute Container designed for 480V input	Midas
SC2TV4-152	ASIC Crypto Tank 2 Slot with 152kW Crypto Cooling Module	Midas
SC3TV4-152	ASIC Crypto Tank 3 Slot with 152kW Crypto Cooling Module	Midas
SC3TV4FA-001	Crypto Cooling Module	

Product	Description	Manufacturer or Provider
Acrylic sample Tank	Acrylic tank display unit for Whinstone.	Midas
MIDAS IMMERSION 2.0	Universal Tank Configuration (Tank, SCCMS, Water Pump Skid, & Cooler)	Midas
S-GFD 090.1D/2x9-N21J/2P.M	18 Fan Adiabatic Tower, Guentner	Guentner/Midas
ULV-LA209K5X-091E885	18 Fan Adiabatic Tower, Kelvion	Kelvion/Midas

6. Preliminary infringement contentions charts setting forth where in the accused products each element of the asserted claim(s) is found: Please see attached Exhibit A for claim charts for both the ICEraQ10 and HashRaQ Max products.
7. GRC's infringement is willful, as it has known of the '457 Patent at least as early as the pendency of the *Midas Green Technologies, LLC v. Rhodium Enterprises, Inc. et al*, Case Number 6:22-cv-00050-ADA, filed in the Western District of Texas on May 29, 2020. GRC was a significant third-party witness in this matter. Discovery is likely to determine that GRC knew of the '457 patent earlier.
8. Production of documents evidencing conception and reduction to practice for each claimed invention: Please see MGT_GRC000001-000941, which is being produced separately.
9. Production of a copy of the file history for the '457 Patent. Please see MGT_GRC000001-928, which is being produced separately.

DATED: August 9, 2024

Respectfully submitted,

/s/ Joseph E. Thomas
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Attorneys for Plaintiff Midas Green Technologies LLC

CERTIFICATE OF SERVICE

I hereby certify that counsel of record who have appeared electronically in this case are being served on August 9, 2024 with a copy of this document via email.

/s/ Tierra D. Mendiola

Tierra D. Mendiola

Exhibit A

Preliminary Infringement Contentions: '457 Patent Claim Chart

ICEraQ 10

Claim Element(s)	Where Found in Accused Instrumentalities
1. An Appliance immersion cooling system comprising:	To the extent the preamble is limiting, below is an image of the ICEraQ 10 which depicts an appliance immersion cooling system. If the preamble is limiting, then the ICEraQ directly infringes the preamble limitation. 
a. tank adapted to immerse in a dielectric fluid a plurality of electrical appliances, each in a respective appliance slot	Below is an image of the ICEraQ Flex which depicts a tank adapted to immerse in a dielectric fluid a plurality of electrical appliances, each in a respective appliance slot distributed vertically along, and extending transverse to, a long wall of the tank. The ICEraQ Flex has a tank that holds multiple enterprise servers. Each server is set into an appliance slot, and each is fully immersed in a dielectric fluid. The ICEraQ directly infringes this limitation as the ICEraQ is a tank adapted to immerse servers, which by definition are electrical appliances, in

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Claim Element(s)	Where Found in Accused Instrumentalities
distributed vertically along, and extending transverse to, a long wall of the tank, the tank comprising:	dielectric fluid. The ICEraQ affixes these servers in a set of spaces (slots), which are oriented transverse to the long wall of the tank. Alternatively, the ICEraQ infringes this limitation under the doctrine of equivalents as computer servers are equivalent to an electrical appliance, and the servers are arranged and secured such that each sits in a space (slot) that allows fluid to flow between servers. 
i. A weir, integrated horizontally into the long wall of the tank adjacent all appliance slots, having an overflow lip adapted to facilitate substantially uniform recovery of the dielectric fluid flowing through each	Below is an image from a video located Green Revolution Cooling, Inc.'s website found at URL https://www.grcooling.com/assets/seth-estrada-with-mineyour-biz-interviews-grcs-client-development-manager-neal-cox/ which depicts the weir located along the long wall of the tank. The weir is shown as the gray boxes on the left side of the image below. The gray boxes are mesh which allows the fluid to flow freely into the fluid recover reservoir, facilitating uniform recovery.

Claim Element(s)	Where Found in Accused Instrumentalities
appliance slot.	 Below is an image from a video located Green Revolution Cooling, Inc.'s website found at URL https://www.grcooling.com/learning-center/dcd-ny-2021-webinar/ The weir in this image is on the right side of the image depicted by mesh boxes in the white wall on the right side of the liquid. This image depicts the weir located along the long wall of the tank: 

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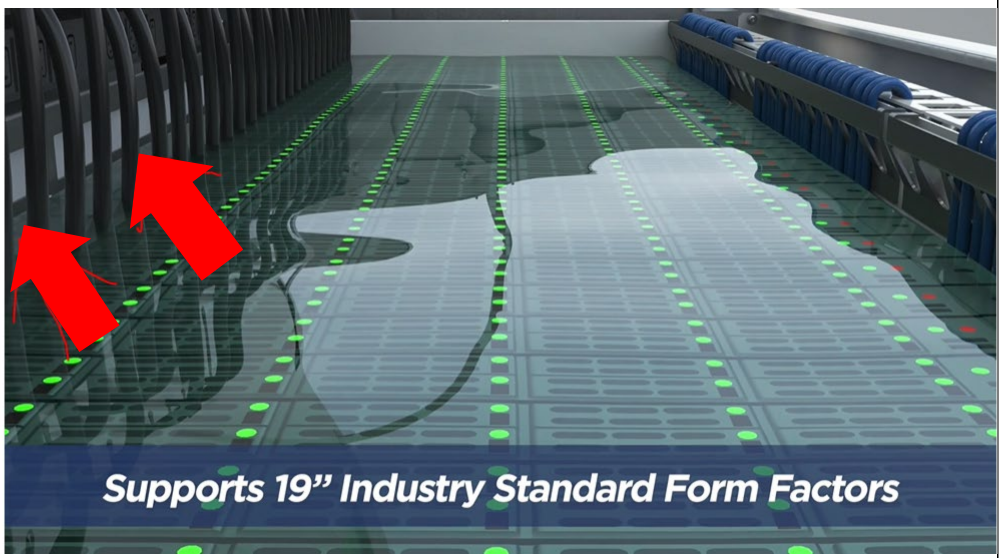
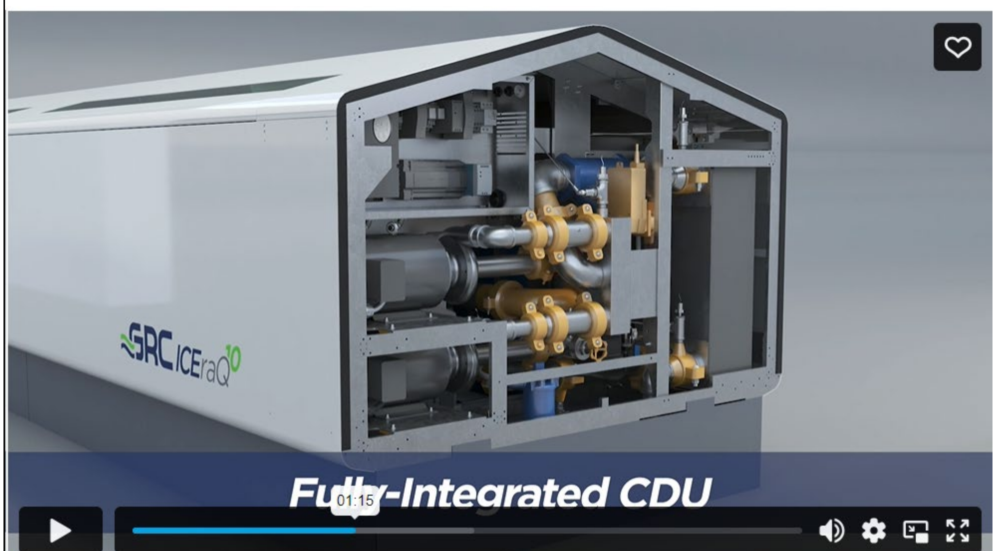
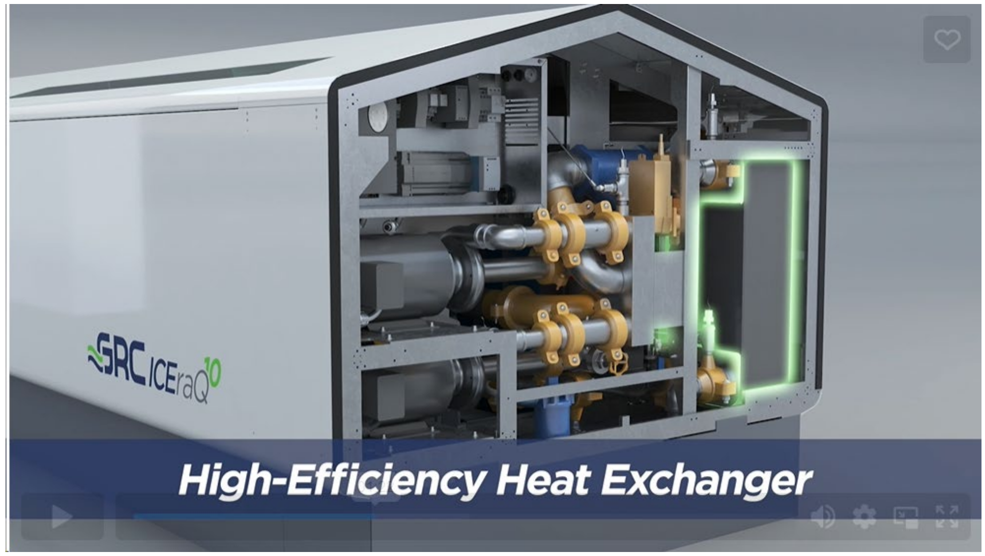
Claim Element(s)	Where Found in Accused Instrumentalities
	The image below is from the same source. This image is a close up of the image above. This image clearly depicts mesh in the wall which acts as a weir:  Further, the image below depicts the GRC ICERAQ 10 weir in action inside the tank in animated form. The picture is annotated by red arrows depicting the location of the weir.

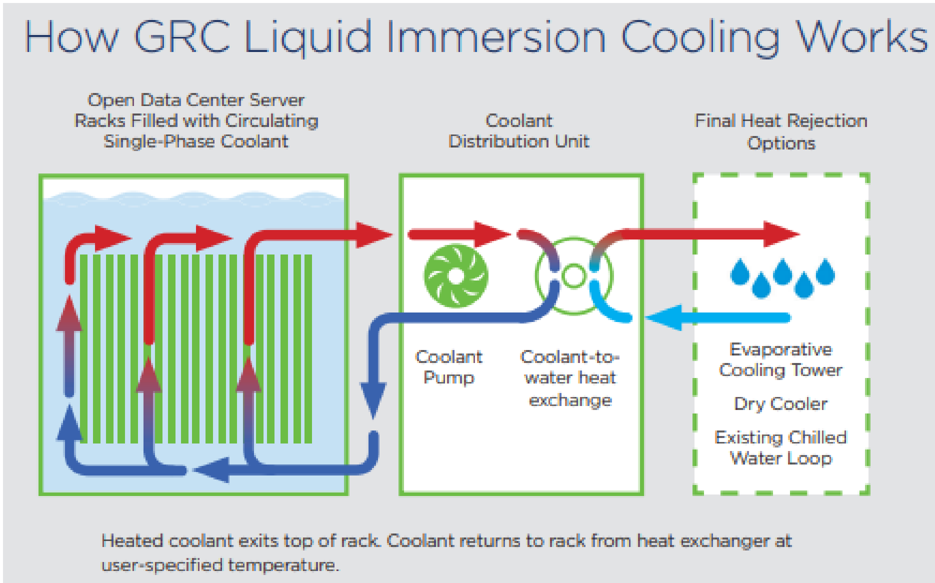
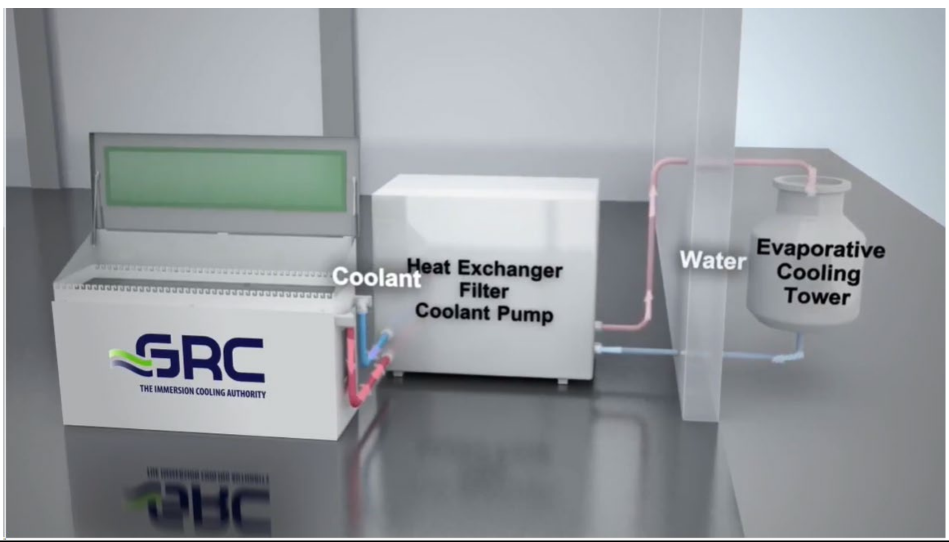
Claim Element(s)	Where Found in Accused Instrumentalities
	 The ICEraQ directly infringes this limitation for the reasons identified above. Alternatively, the ICEraQ infringes this limitation under the doctrine of equivalents as the mesh described above is integrated into the long sidewall of the tank for the purpose of enabling dielectric fluid to pass through and fall by gravity into a receiving reservoir. In this way, the mesh acts as an overflow lip above a gravity fed dielectric fluid recovery reservoir. This has an equivalent function as the weir as claimed and operates by allowing warmer dielectric fluid to flow by gravity from the tank, thereby enabling removal of heat from the servers while keeping the servers fully immersed. The mesh has openings that act as an overflow lip to allow warmed fluid to uniformly flow from the tank into the reservoir.
ii. A dielectric fluid recovery reservoir positioned vertically beneath the overflow lip of the weir and adapted to receive the dielectric	A weir is a gravity fed structure that allows fluid to overflow a lip. The overflowing fluid must be received at a recovery reservoir for collection prior to the fluid being circulated by a pump. Because there is a gravity flow overflow weir in the GRC system, there will be a fluid recovery reservoir. The recovery reservoir must be located vertically beneath the overflow lip to collect the dielectric fluid. The ICEraQ directly infringes this limitation.

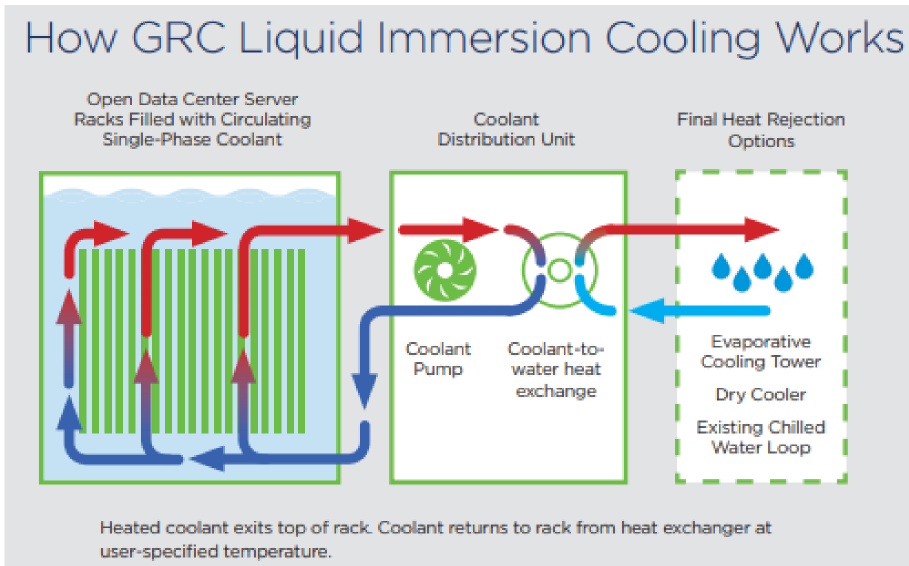
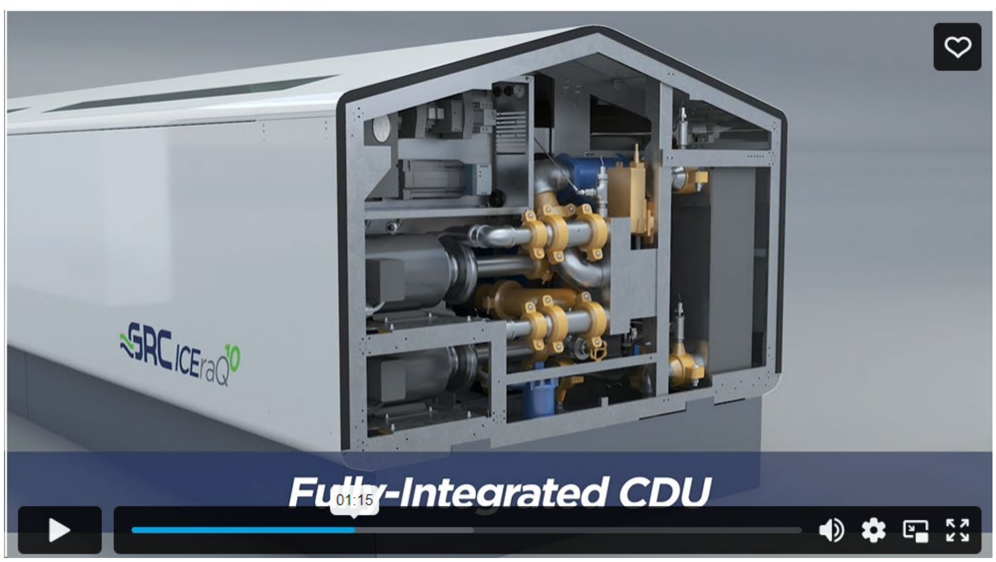
Claim Element(s)	Where Found in Accused Instrumentalities
fluid over the weir.	Alternatively, the ICEraQ infringes this limitation under the doctrine of equivalents as the mesh described above is integrated into the long sidewall of the tank for enabling dielectric fluid to pass through and fall by gravity into a structure that is equivalent to a receiving reservoir. This has an equivalent function as the recovery reservoir as claimed and operates by receiving dielectric fluid by a gravity flow and allowing a pump to move fluid from the reservoir for cooling and then recirculation in the tank.
b. A primary circulation facility adapted to circulate the dielectric fluid through the tank, comprising:	Below is an image of a primary circulation facility found at https://www.grcooling.com/ICEraQ/  This system contains a high efficiency heat exchanger:

Claim Element(s)	Where Found in Accused Instrumentalities
	 Redundant variable-speed pumps. The pumps and associated plumbing circulate the dielectric fluid through the tank.  And intelligent controls:

Claim Element(s)	Where Found in Accused Instrumentalities
	 The ICEraQ directly infringes this limitation. Alternatively, the ICEraQ infringes this limitation under the doctrine of equivalents because the ICEraQ contains a fully integrated coolant distribution unit or CDU. This CDU is fed by the pump(s) of the ICEraQ move heated fluid from the recovery reservoir for cooling in a heat exchanger, and then recirculate the cooled fluid back into the tank. These two systems are managed by the intelligent controls.
i. A plenum, positioned adjacent the bottom of the tank, adapted to dispense the dielectric fluid substantially uniformly upward through each appliance slot;	On information and belief, the ICEraQ contains a plenum which is adjacent to the bottom of the tank adapted to dispense the dielectric fluid substantially uniformly upward through each appliance slot. The plenum is depicted faintly. Holes can be seen in the image below on the bottom of the tank in a uniform line. Below is an image which depicts the potential presence of a plenum, as indicated by the red box annotated on the image:

Claim Element(s)	Where Found in Accused Instrumentalities
	 The ICEraQ directly infringes this limitation. Alternatively, the ICEraQ infringes this limitation under the doctrine of equivalents as the structure is substantially at the bottom of the tank and is constructed to enable cooled fluid to flow upwardly through the servers, thereby allowing the servers to transfer heat to the rising fluid. The warmed fluid is then removed from the top of tank over the weir structure as previously described.
c. A secondary fluid circulation facility adapted to extract heat from the dielectric fluid circulation in the primary circulation facility, and dissipate to the environment the heat so extracted and	Below is an image of the operation of the ICEraQ which identifies a secondary fluid circulation system: The ICEraQ directly infringes this limitation. Alternatively, the ICEraQ infringes this limitation under the doctrine of equivalents as the ICEraQ moves heated fluid from the tank to a heat exchanger (equivalent to the primary circulation facility) where the fluid is cooled, and then the cooled fluid is recirculated to the tank. The heat exchanger moves heat from the fluid to another fluid (water or a water/glycol solution), which is moved to cooling towers, or other heat dispersion unit, to remove heat from the water or water/glycol solution, to the environment in which the cooling towers sit. This is equivalent to a secondary fluid circulation facility.

Claim Element(s)	Where Found in Accused Instrumentalities
	 
d. a control facility adapted to coordinate the operation of the primary and secondary fluid circulation facilities as a function of the	Below is an image identifying a control facility. The Control Facility is identified as a coolant distribution unit. Further the ICEraQ contains intelligent controls. These are depicted in an infographic depicting how the coolant distribution unit works to coordinate the operation of the primary and secondary circulation facilities a function of the dielectric fluid in the tank: The ICEraQ directly infringes this limitation.

Claim Element(s)	Where Found in Accused Instrumentalities
temperature of the dielectric fluid in the tank.	Alternatively, the ICEraQ infringes this limitation under the doctrine of equivalents as the ICEraQ is designed to maintain the servers at a proper temperature, and uses electrically controlled coolant distribution unit, pumps and heat dispersion units to move dielectric fluid from the heat exchanger throughout the tank, and the water or water/glycol solution to the heat dispersion unit for cooling.  

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<table>
<tr><th>Claim Element(s)</th><th>Where Found in Accused Instrumentalities</th></tr>
<tr><td></td><td>
</td></tr>
<tr><td>2. The system of claim 1 wherein the tank and primary circulation facility comprise a highly-integrated module.</td><td>Below is an image of the ICEraQ identify that the primary circulation facility is comprised of a highly integrated module.


The ICEraQ directly infringes this limitation.

Alternatively, the ICEraQ infringes this limitation under the doctrine of equivalents as the tank structure and the pumps and piping for the primary circulation facility are constructed withing the same housing structure, providing a standard solution that can be adapted for installation based on specific space parameters.</td></tr>
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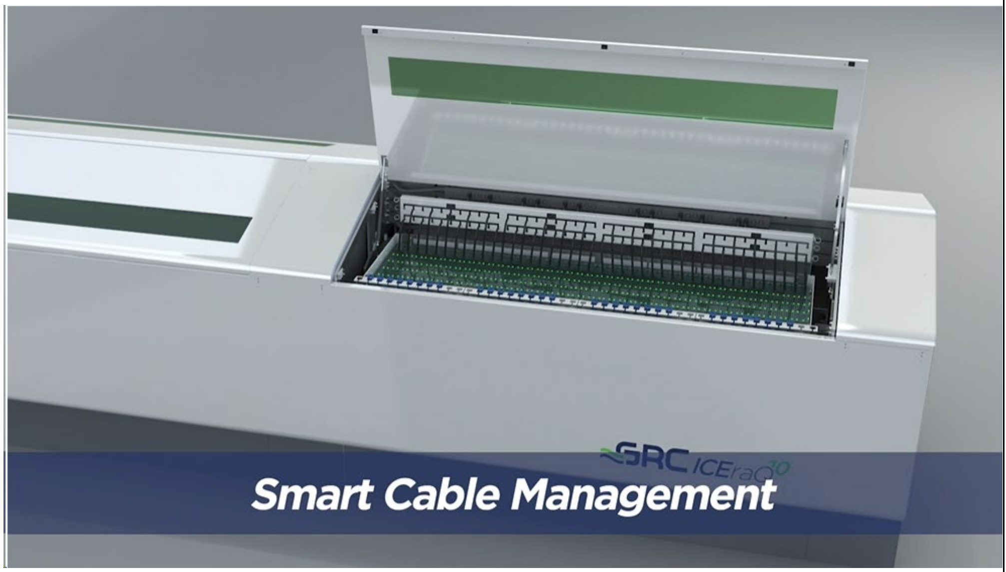
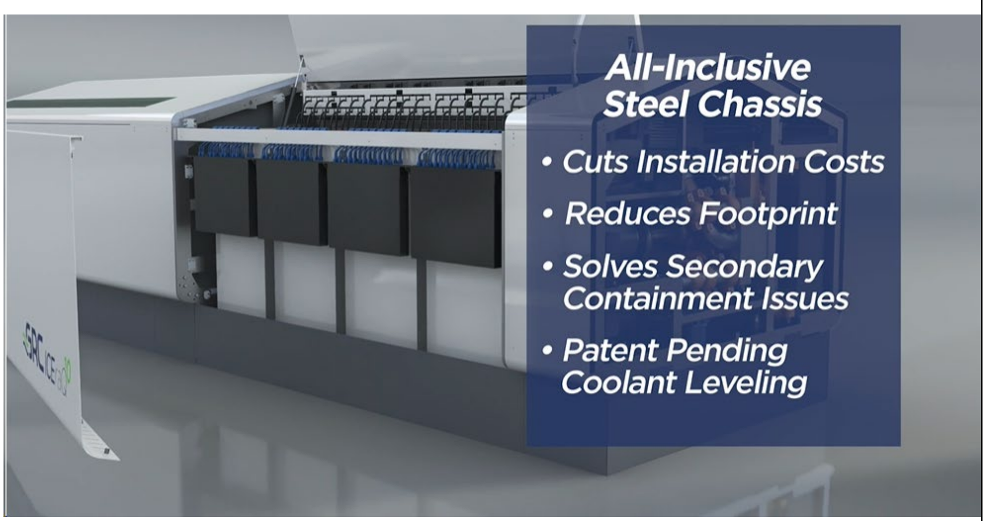
Claim Element(s)	Where Found in Accused Instrumentalities
3. The system of claim 1 wherein the tank further comprises: a. An interconnected panel facility adapted to mount appliance support equipment.	Below is an image of the ICEraQ depicting an interconnected panel facility adapted to mount appliance support equipment.   The ICEraQ directly infringes this limitation. Alternatively, the ICEraQ infringes this limitation under the doctrine of equivalents as the ICEraQ has a structure positioned vertically above, or alternatively in parallel with the fluid level, that is used to coordinate the

Claim Element(s)	Where Found in Accused Instrumentalities
	connection of cabling to the servers which serves the purpose of ease of accessibility and standardization of cable management
6. A tank module adapted for use in an appliance immersion cooling system, the dank module comprising:	The ICEraQ directly infringes this limitation as the ICEraQ is a tank module for use in an immersion cooling system. As can be seen above the tank is modular which allows for installation in sets. Alternatively, the ICEraQ infringes this limitation under the doctrine of equivalents as computer servers are equivalent to an electrical appliance, and the servers are arranged and secured such that each sits in a space (slot) that allows fluid to flow between servers.
a. a tank adapted to immerse in a dielectric fluid a plurality of electrical appliances, each in a respective appliance slot distributed vertically along, and extending transverse to, a long wall of the tank, the tank comprising:	Below is an image of the ICEraQ Flex which depicts a tank adapted to immerse in a dielectric fluid a plurality of electrical appliances, each in a respective appliance slot distributed vertically along, and extending transverse to, a long wall of the tank. The ICEraQ Flex has a tank that holds multiple enterprise servers. Each server is set into an appliance slot, and each is fully immersed in a dielectric fluid.  The ICEraQ directly infringes this limitation as the ICEraQ is a tank adapted to immerse servers, which by definition are electrical appliances, in

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Claim Element(s)	Where Found in Accused Instrumentalities
	dielectric fluid. The ICEraQ affixes these servers in a set of spaces (slots), which are oriented transverse to the long wall of the tank. Alternatively, the ICEraQ infringes this limitation under the doctrine of equivalents as computer servers are equivalent to an electrical appliance, and the servers are arranged and secured such that each sits in a space (slot) that allows fluid to flow between servers.
i. A weir, integrated horizontally into the long wall of the tank adjacent all appliance slots, having an overflow lip adapted to facilitate substantially uniform recovery of the dielectric fluid flowing through each appliance slot; and;	Below is an image from a video located Green Revolution Cooling, Inc.'s website found at URL https://www.grcooling.com/assets/seth-estrada-with-mineyour-biz-interviews-grcs-client-development-manager-neal-cox/ which depicts the weir located along the long wall of the tank. The weir is shown as the gray boxes on the left side of the image below. The gray boxes are mesh which allows the fluid to flow freely into the fluid recover reservoir.  Below is an image from a video located Green Revolution Cooling, Inc.'s website found at URL https://www.grcooling.com/learning-center/dcd-ny-2021-webinar/ The weir in this image is on the right side of the image depicted by mesh boxes in the white wall on the right side of the liquid. This image depicts the weir located along the long wall of the tank:

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Claim Element(s)	Where Found in Accused Instrumentalities
	 The image below is from the same source. This image is a close up of the image above. This image clearly depicts mesh in the wall which acts as a weir:

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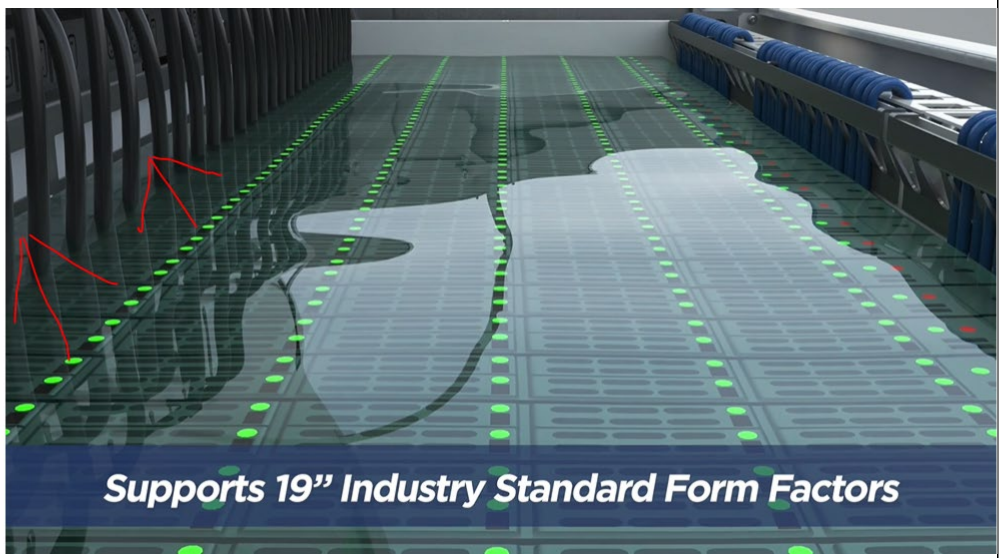
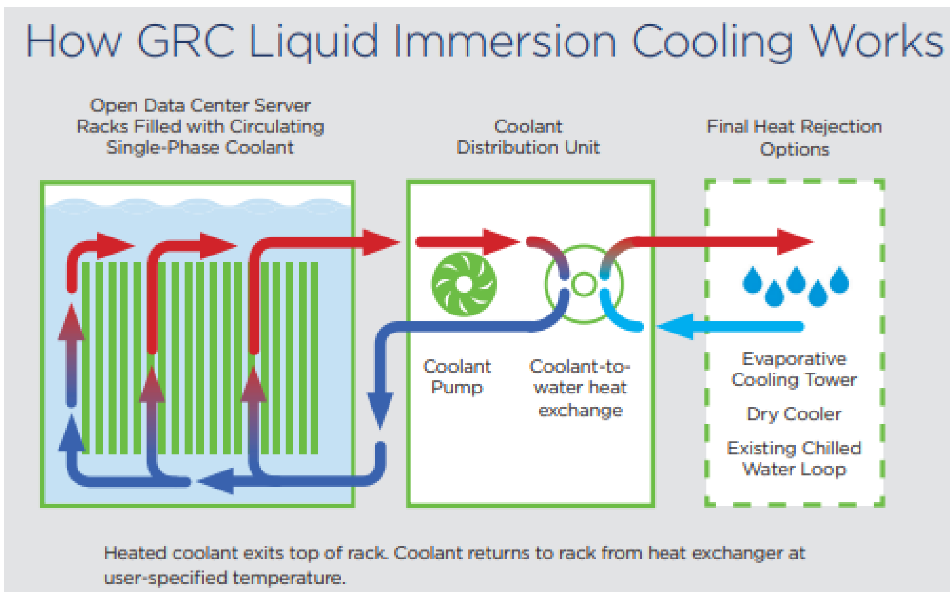
Claim Element(s)	Where Found in Accused Instrumentalities
	 Further, the image below depicts the GRC ICERAQ 10 weir in action inside the tank in animated form. The picture is annotated by red arrows depicting the location of the weir.

Claim Element(s)	Where Found in Accused Instrumentalities
	 The ICEraQ directly infringes this limitation for the reasons identified above. Alternatively, the ICEraQ infringes this limitation under the doctrine of equivalents as the mesh described above is integrated into the long sidewall of the tank for the purpose of enabling dielectric fluid to pass through and fall by gravity into a receiving reservoir. In this way, the mesh acts as an overflow lip above a gravity fed dielectric fluid recovery reservoir. This has an equivalent function as the weir as claimed and operates by allowing warmer dielectric fluid to flow by gravity from the tank, thereby enabling removal of heat from the servers while keeping the servers fully immersed. The mesh has openings that act as an overflow lip to allow warmed fluid to uniformly flow from the tank into the reservoir.
ii. A dielectric fluid recovery reservoir positioned vertically beneath the overflow lip of the weir and adapted to receive the dielectric	A weir is a gravity fed structure that allows fluid to overflow a lip. The overflowing fluid must be received at a recovery reservoir for collection prior to the fluid being circulated by a pump. Because there is a gravity flow overflow weir in the GRC system, there will be a fluid recovery reservoir. The recovery reservoir must be located vertically beneath the overflow lip to collect the dielectric fluid. The ICEraQ directly infringes this limitation.

<table>
<tr><th>Claim Element(s)</th><th>Where Found in Accused Instrumentalities</th></tr>
<tr><td>fluid as it flows over the weir;</td><td>Alternatively, the ICEraQ infringes this limitation under the doctrine of equivalents as the mesh described above is integrated into the long sidewall of the tank for enabling dielectric fluid to pass through and fall by gravity into a structure that is equivalent to a receiving reservoir. This has an equivalent function as the recovery reservoir as claimed and operates by receiving dielectric fluid by a gravity flow and allowing a pump to move fluid from the reservoir for cooling and then recirculation in the tank.</td></tr>
<tr><td>b. A primary circulation facility adapted to circulate the dielectric fluid through the tank, comprising:</td><td>Below is an infographic which depicts the primary circulation facility of the ICEraQ 10.


The ICEraQ directly infringes this limitation.</td></tr>
</table>

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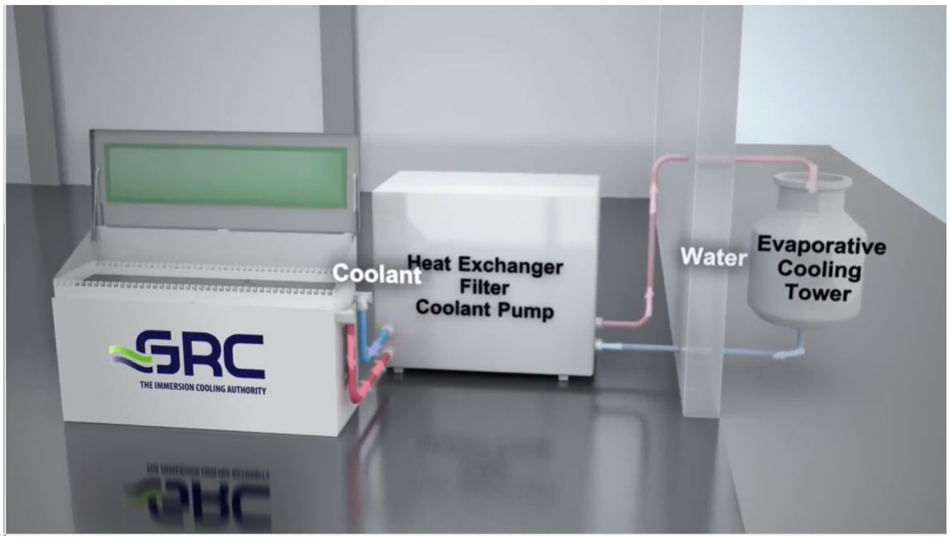
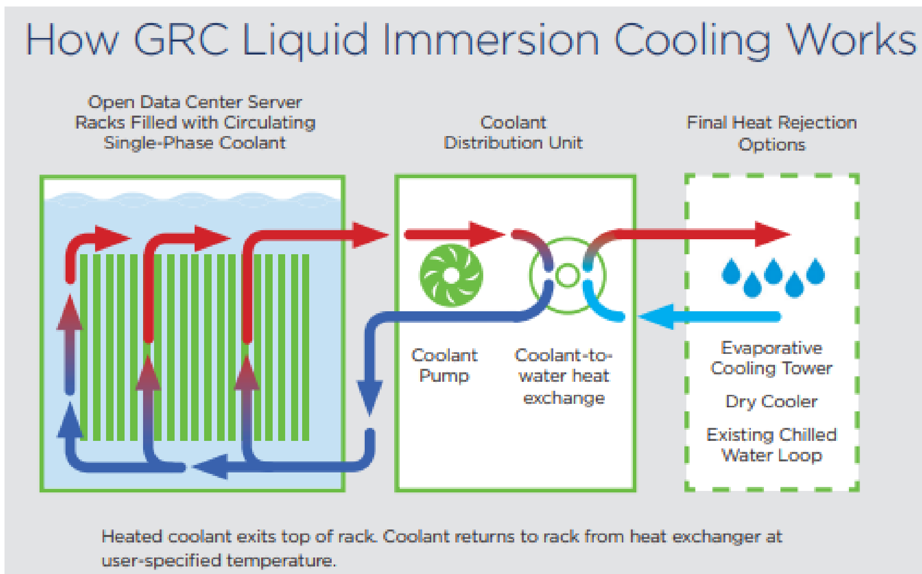
Claim Element(s)	Where Found in Accused Instrumentalities
	Alternatively, the ICEraQ infringes this limitation under the doctrine of equivalents because the ICEraQ contains a fully integrated coolant distribution unit or CDU. This CDU is fed by the pump(s) of the ICEraQ move heated fluid from the recovery reservoir for cooling in a heat exchanger, and then recirculate the cooled fluid back into the tank. These two systems are managed by the intelligent controls. 
i. A plenum, positioned adjacent the bottom of the tank, adapted to dispense the dielectric fluid substantially uniformly upward through each appliance slot; and	On information and belief, the ICEraQ contains a plenum which is adjacent to the bottom of the tank adapted to dispense the dielectric fluid substantially uniformly upward through each appliance slot. Below is an image which depicts the potential presence of a plenum. The ICEraQ directly infringes this limitation. Alternatively, the ICEraQ infringes this limitation under the doctrine of equivalents as the structure is substantially at the bottom of the tank and is constructed to enable cooled fluid to flow upwardly through the servers, thereby allowing the servers to transfer heat to the rising fluid. The warmed fluid is then removed from the top of tank over the weir structure as previously described.
c. A control facility adapted to control the operation of the primary	Below is an image identifying a control facility. The Control Facility is identified as a coolant distribution unit. Further the ICEraQ contains intelligent controls. These are depicted in an infographic depicting how the coolant distribution unit works to coordinate the operation of the primary

<table>
<tr><th>Claim Element(s)</th><th>Where Found in Accused Instrumentalities</th></tr>
<tr><td>fluid circulation facility as a function of the temperature of the dielectric fluid in the tank.</td><td>and secondary circulation facilities a function of the dielectric fluid in the tank:

The ICEraQ directly infringes this limitation.

Alternatively, the ICEraQ infringes this limitation under the doctrine of equivalents as the ICEraQ is designed to maintain the servers at a proper temperature, and uses electrically controlled coolant distribution unit, pumps and heat dispersion units to move dielectric fluid from the heat exchanger throughout the tank, and the water or water/glycol solution to the



Heated coolant exits top of rack. Coolant returns to rack from heat exchanger at user-specified temperature.
heat dispersion unit for cooling.</td></tr>
</table>

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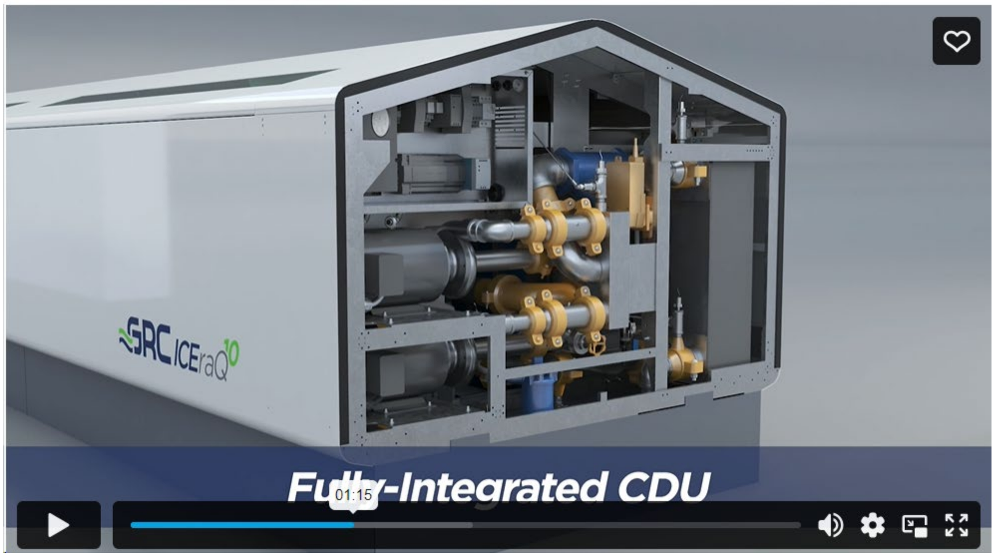
Claim Element(s)	Where Found in Accused Instrumentalities
	 

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HashRaQ Max

Claim Element(s)	Where Found in Accused Instrumentalities
1. An Appliance immersion cooling system comprising:	To the extent that the preamble is limiting, below is an image of the HashRaQ depicting a cooling system.  The HashRaQ Max directly infringes this limitation as the HashRaQ Max is a tank adapted to immerse Bitcoin mining computers, which by definition are electrical appliances, in dielectric fluid. The HashRaQ Max affixes these computers in a set of spaces (slots), which are oriented transverse to the long wall of the tank. Alternatively, the HashRaQ Max infringes this limitation under the doctrine of equivalents as Bitcoin mining computers are equivalent to an electrical appliance, and the computers are arranged and secured such that each sits in a space (slot) that allows fluid to flow between computers.
a. a tank adapted to immerse in a dielectric fluid a plurality of electrical appliances, each in a respective appliance slot distributed vertically along, and extending	Below is an image of the HashRaQ which depicts a tank adapted to immerse in a dielectric fluid a plurality of electrical appliances each in a respective appliance slot distributed vertically along, and extending transverse to, a long wall of the tank. The HashRaQ Max directly infringes this limitation as the HashRaQ Max is a tank adapted to immerse Bitcoin mining computers, which by definition are electrical appliances, in dielectric fluid. The HashRaQ Max affixes these computers in a set of spaces (slots), which are oriented transverse to the long wall of the tank.

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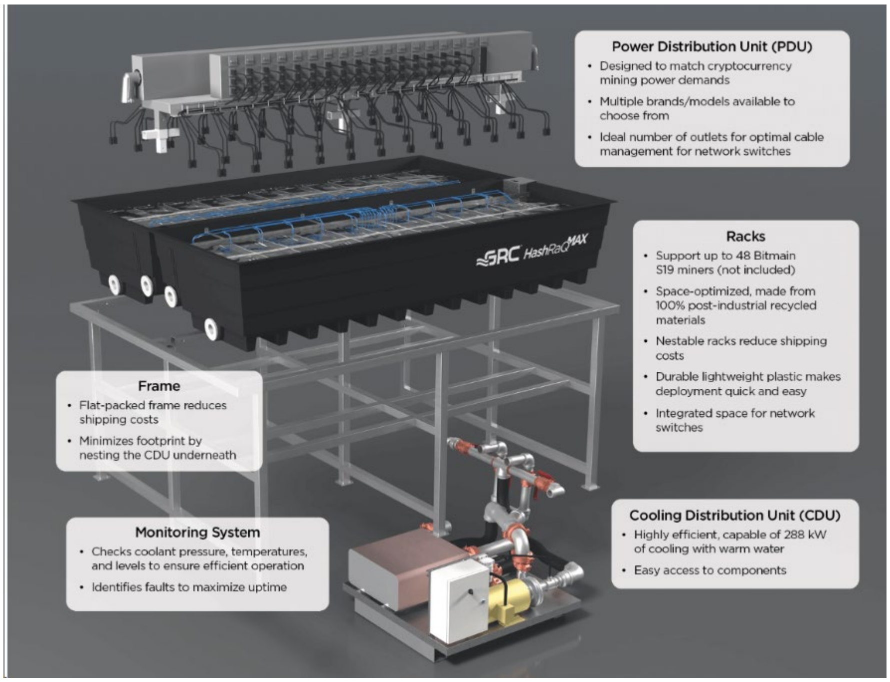
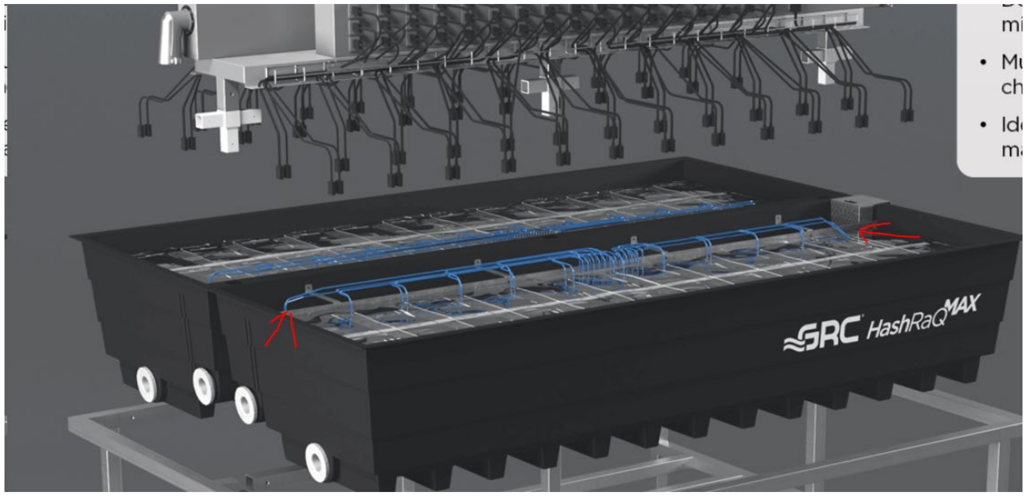
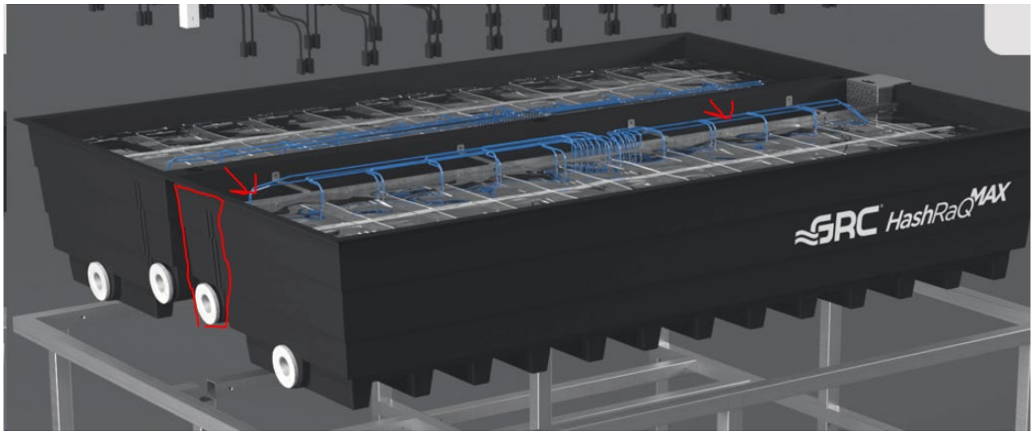
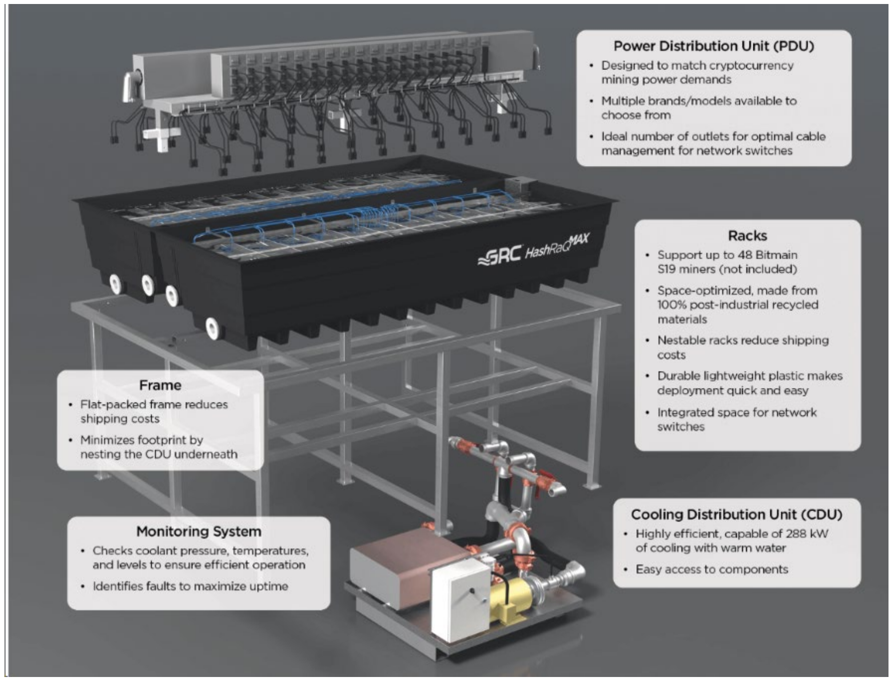
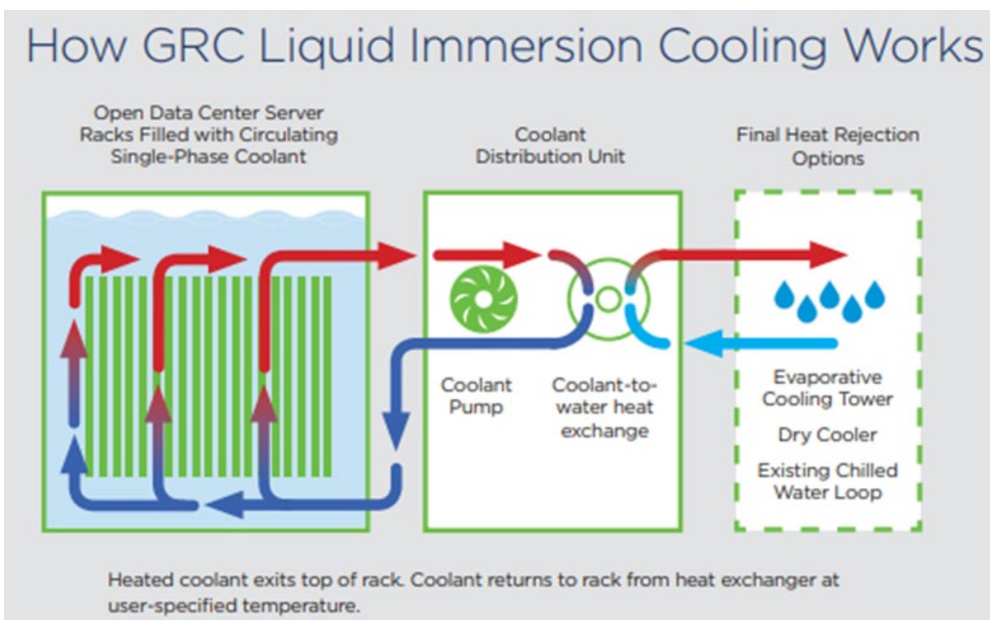
<table>
<tr><th>Claim Element(s)</th><th>Where Found in Accused Instrumentalities</th></tr>
<tr><td>transverse to, a long wall of the tank, the tank comprising:</td><td>Alternatively, the HashRaQ Max infringes this limitation under the doctrine of equivalents as mining computers are equivalent to an electrical appliance, and the computers are arranged and secured such that each sits in a space (slot) that allows fluid to flow between computers.

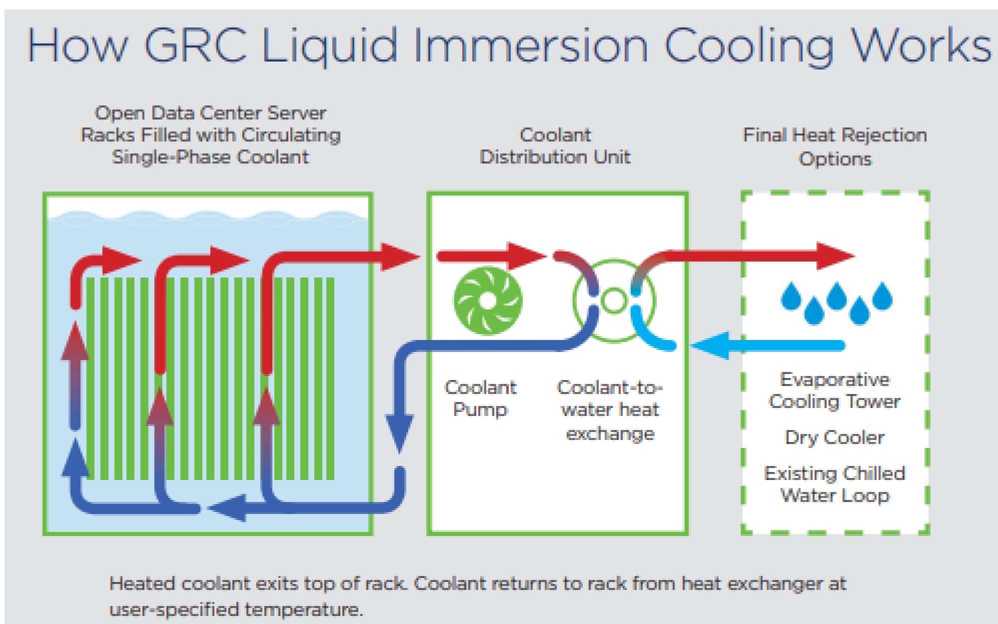

</td></tr>
<tr><td>i. A weir, integrated horizontally into the long wall of the tank adjacent all appliance slots, having an overflow lip adapted to facilitate substantially uniform recovery of the dielectric fluid flowing through each appliance slot.</td><td>Below is an image of the HashRaQ depicting a weir located under the Power Dispersion Units along the center walls of the interior of the tank. This weir is adjacent to all appliance slots and adapted to allow for substantially uniform recovery of the dielectric fluid flowing through the appliance slots. The weir is indicated by red arrows and is a metal wall in the tank which separates the fluid from the overflow reservoir. This can be seen in the image below:</td></tr>
</table>

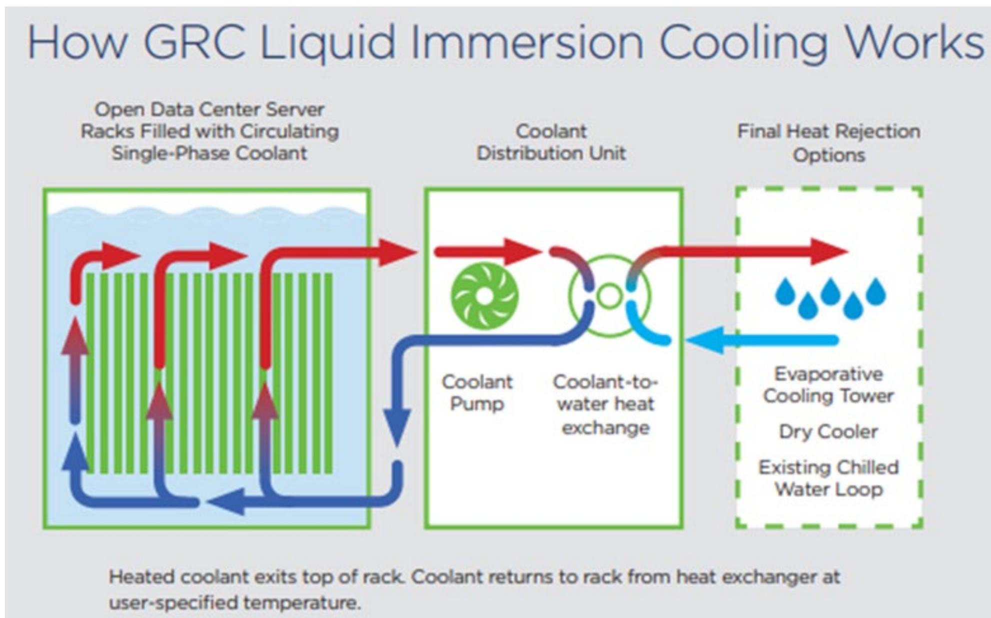
Claim Element(s)	Where Found in Accused Instrumentalities
	 The HashRaQ Max directly infringes this limitation for the reasons identified above. Alternatively, the HashRaQ Max infringes this limitation under the doctrine of equivalents as the mesh described above is integrated into the long sidewall of the tank for the purpose of enabling dielectric fluid to pass through and fall by gravity into a receiving reservoir. In this way, the mesh acts as an overflow lip above a gravity fed dielectric fluid recovery reservoir. This has an equivalent function as the weir as claimed and operates by allowing warmer dielectric fluid to flow by gravity from the tank, thereby enabling removal of heat from the computers while keeping the computers fully immersed. The mesh has openings that act as an overflow lip to allow warmed fluid to uniformly flow from the tank into the reservoir.

Claim Element(s)	Where Found in Accused Instrumentalities
ii. A dielectric fluid recovery reservoir positioned vertically beneath the overflow lip of the weir and adapted to receive the dielectric fluid over the weir.	Below is an image of the HashRaQ depicting a fluid recovery reservoir which are depicted underneath the power distribution units and cable management system. The reservoir has pipes exiting the tank near the center of the unit. The fluid recovery  reservoir is indicated by a red rectangle and arrows in the image below: The HashRaQ Max directly infringes this limitation as described and shown above. Alternatively, the HashRaQ Max infringes this limitation under the doctrine of equivalents as the mesh described above is integrated into the long sidewall of the tank for enabling dielectric fluid to pass through and fall by gravity into a structure that is equivalent to a receiving reservoir. This has an equivalent function as the recovery reservoir as claimed and operates by receiving dielectric fluid by a gravity flow and allowing a pump to move fluid from the reservoir for cooling and then recirculation in the tank.
b. A primary circulation facility adapted to circulate the dielectric fluid through the tank, comprising:	Below is an image of the HashRaQ indicating that the image contains a cooling distribution unit, which circulates the hot fluid flowing form the tank through the cooling system, and then circulates the cool fluid back through the tank. This meets the claim limitation of a primary circulation facility. The HashRaQ Max directly infringes this limitation as described above. Alternatively, the HashRaQ Max infringes this limitation under the doctrine of equivalents because the HashRaQ Max contains a fully integrated coolant distribution unit or CDU. This CDU is fed by the pump(s) of the HashRaQ Max move heated fluid from the recovery reservoir for cooling in a heat exchanger, and

Claim Element(s)	Where Found in Accused Instrumentalities
	then recirculate the cooled fluid back into the tank. These two systems are managed by the intelligent controls.  Below is an infographic that shows the operation of the cooling distribution unit. 

Claim Element(s)	Where Found in Accused Instrumentalities
i. A plenum, positioned adjacent the bottom of the tank, adapted to dispense the dielectric fluid substantially uniformly upward through each appliance slot; and	Below is an image of the HashRaQ which depicts a plenum positioned adjacent the bottom of the tank, adapted to dispense the dielectric fluid substantially uniformly upward through each appliance slot.  The HashRaQ Max directly infringes this limitation as described above. Alternatively, the HashRaQ Max infringes this limitation under the doctrine of equivalents as the structure is substantially at the bottom of the tank and is

Claim Element(s)	Where Found in Accused Instrumentalities
	constructed to enable cooled fluid to flow upwardly through the computers, thereby allowing the computers to transfer heat to the rising fluid. The warmed fluid is then removed from the top of tank over the weir structure as previously described.
c. A secondary fluid circulation facility adapted to extract heat from the dielectric fluid circulation in the primary circulation facility and dissipate to the environment the heat so extracted.	Below is an infographic which depicts the primary and secondary circulation facilities working in tandem. This image, on information and belief, applies to the application of the primary and secondary circulation facilities in the HashRaQ. The HashRaQ Max directly infringes this limitation as described below. Alternatively, the HashRaQ Max infringes this limitation under the doctrine of equivalents as the HashRaQ Max moves heated fluid from the tank to a heat exchanger (equivalent to the primary circulation facility) where the fluid is cooled, and then the cooled fluid is recirculated to the tank. The heat exchanger moves heat from the fluid to another fluid (water or a water/glycol solution), which is moved to cooling towers, or other heat dispersion unit, to remove heat from the water or water/glycol solution, to the environment in which the cooling towers sit. This is equivalent to a secondary fluid circulation facility. 
d. A control facility adapted to control the	The HashRaQ has a Coolant Distribution Unit that operates as a control facility. This is confirmed below in a HashRaQ Max information sheet under monitoring and reporting. This information sheet details a control system adapted to control the

Claim Element(s)	Where Found in Accused Instrumentalities
operation of the primary fluid circulation facility as a function of the temperature of the dielectric fluid in the tank.	operation of the primary and secondary circulation facilities as a function of the temperature of the dielectric fluid in the tank. The HashRaQ Max directly infringes this limitation as described herein. Alternatively, the HashRaQ Max infringes this limitation under the doctrine of equivalents as the HashRaQ Max is designed to maintain the computers at a proper temperature, and uses electrically controlled coolant distribution unit, pumps and heat dispersion units to move dielectric fluid from the heat exchanger throughout the tank, and the water or water/glycol solution to the heat dispersion unit for cooling. 

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Claim Element(s)	Where Found in Accused Instrumentalities
	

HashRaQ MAX

General Product Specifications

Number of Immersion-Cooled Racks	2
Total Miner Capacity	48 Bitmain S19 miners
Number of CDUs per Double-Capacity Rack	1[3]
Total Cooling Capacity	
Chiller-Free Water: 40°C (104°F)	288 kW[4]
Over-Clocking Capability	6 kW/miner[5]
pPUE[6]	<1.02
Standard PDU Details	
Quantity	Four
Outlets	24 C19 each
Architecture	Basic
Circuit Breaker Amps	160A each
Alternate PDUs Available	
Overall Dimensions (L x W x H)	2.85 m x 1.97 m x 1.55 m (9.4 ft x 6.5 ft x 5.1 ft)
Estimated Component Weights	
Racks, CDU, and Stand	227 kg (500 lbs)
Coolant	860 kg (1894 lbs)
Estimated Weight When Commissioned[7]	1950 kg (4300 lbs)

Power and Water

Final Heat Rejection Options	Flexible options can include: Adiabatic/evaporative cooling tower; Dry cooler[8]
Water Requirements	Maximum particulate size 0.8 mm[9]; Input temperature 40°C (104°F); Recirculating flow 29.5 m³/hr (130 gpm), 6 to 9°C dT (10 to 15°F dT); Connection 73.0 mm (2.5") male Victaulic
CDU Power Requirements	1x 3PH 460VAC 60hz, max power consumption 3.7kW
PDU Power Requirements	4x 160A 415Y/240VAC[10]

Monitoring and Reporting

Platform	IoT with Modbus TCP/IP for BMS interface
Alerting	Alerts via DCIM platform
DCIM/BMS Integration Protocols	Modbus
Measurements and Fault Detection	Operating temperatures of coolant and water; Coolant pressure; Coolant levels

Site Requirements

Client provides	Access to power and recirculating water[11]; Secondary containment; Level surface (slab or raised floor) with slope <1/650; Standard data center fire suppression as required
Operating Environment	Ambient temperature 5 to 45°C (40 to 113°F)

Delivery and Installation

Lead Time	Typically ships within 12 weeks after receipt of purchase order.
Shipping Terms	Ex-Works
On-site Installation and Training[12]	One business day per unit

Warranty

Includes 90-day limited warranty against defects in material and workmanship with limited support. Annual monitoring plans	Other plans available for additional cost: Full year limited warranties and support plans; Annual maintenance plans

[3] An additional spare CDU available for additional cost.
[4] CDU is designed for up to 288 kW (6 kW per miner). Actual cooling capacity will depend on end user's specified level of overclocking, as well as final heat rejection system.
[5] Over-clocking greater than 6 kW/miner may require colder/chilled water.
[6] General specification assuming 6 kW/miner. Values will change if end user utilizes less over-clocking.
[7] Includes coolant, mining equipment, cables, and cords. Actual weight depends on configuration.
[8] System cooling performance dependent on climate.
[9] Failures resulting from particulates exceeding 0.8mm or poor water quality will void warranty.
[10] One input power feed per PDU.
[11] GRC and HTS can assist in heat rejection design/implementation.
[12] Installation applies to installing the rack in the data center space only and does not include installation of digital asset mining equipment.

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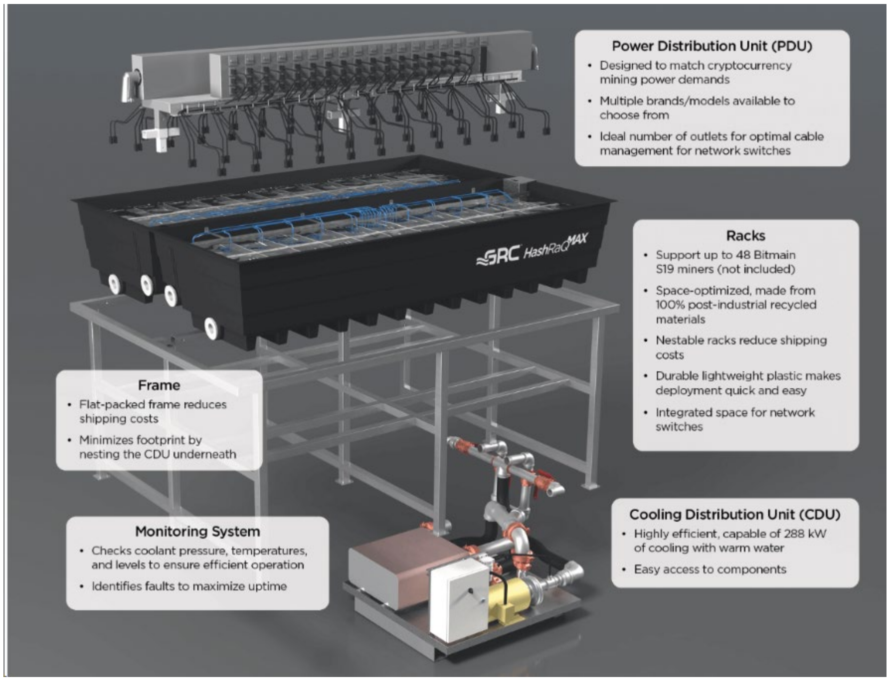
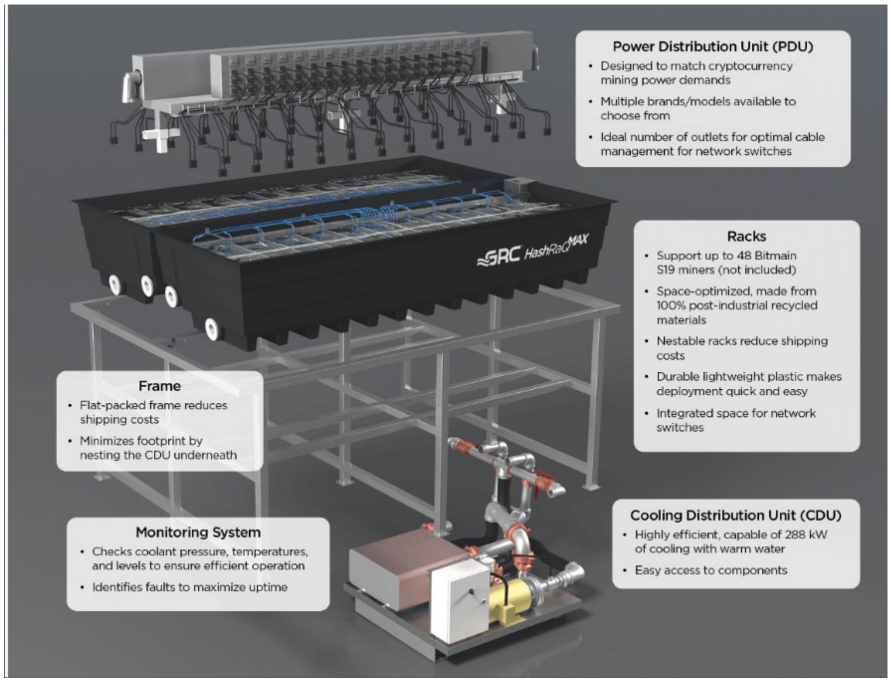
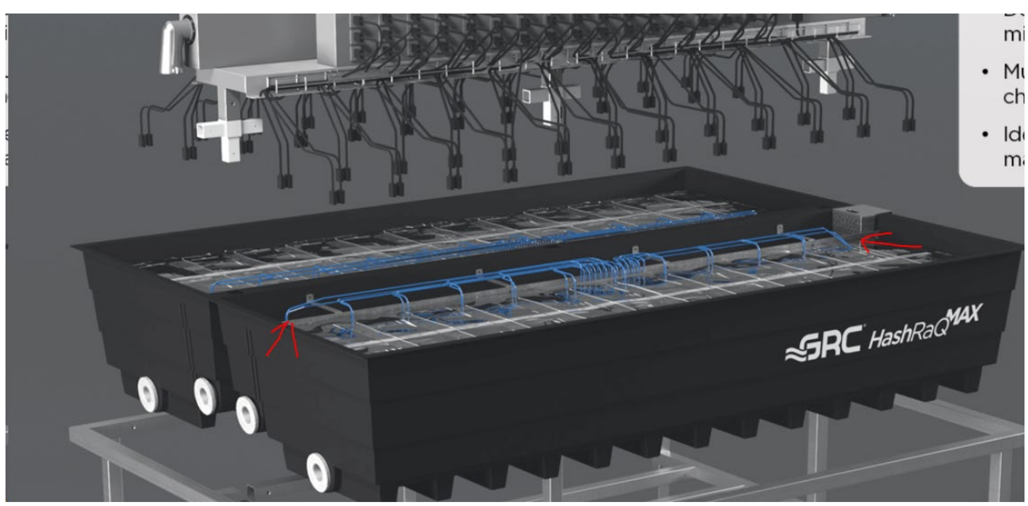
Claim Element(s)	Where Found in Accused Instrumentalities
2. The system of claim 1 wherein the tank and primary circulation facility comprise a highly-integrated module.	Below is an image of the HashRaQ depicting a highly integrated module. The HashRaQ Max directly infringes this limitation as described herein. Alternatively, the HashRaQ Max infringes this limitation under the doctrine of equivalents as the tank structure and the pumps and piping for the primary circulation facility are constructed withing the same housing structure, providing a standard solution that can be adapted for installation based on specific space parameters.

<table>
<tr><th>Claim Element(s)</th><th>Where Found in Accused Instrumentalities</th></tr>
<tr><td></td><td>
</td></tr>
<tr><td>3. The system of claim 1 wherein the tank further comprises:
a. An interconnected panel facility adapted to mount appliance support equipment.</td><td>Below is an image of the ICEraQ depicting an interconnected panel facility adapted to mount appliance support equipment.


The HashRaQ Max directly infringes this limitation as described herein.

Alternatively, the HashRaQ Max infringes this limitation under the doctrine of equivalents as the HashRaQ Max has a structure positioned vertically above, or alternatively in parallel with the fluid level, that is used to coordinate the connection</td></tr>
</table>

Claim Element(s)	Where Found in Accused Instrumentalities
	of cabling to the computers, which serves the purpose of ease of accessibility and standardization of cable management
6. A tank module adapted for use in an appliance immersion cooling system, the dank module comprising:	To the extent that the preamble is limiting, below is an image of the HashRaQ depicting a cooling system.  The HashRaQ Max directly infringes this limitation as the HashRaQ Max is a tank module for use in an immersion cooling system. As can be seen above the tank is modular which allows for installation in sets. Alternatively, the HashRaQ Max infringes this limitation under the doctrine of equivalents as Bitcoin mining computers are equivalent to an electrical appliance, and the computers are arranged and secured such that each sits in a space (slot) that allows fluid to flow between computers.
a. a tank adapted to immerse in a dielectric fluid a plurality of electrical appliances, each in a respective appliance slot distributed vertically along, and extending transverse to, a	Below is an image of the HashRaQ which depicts a tank adapted to immerse in a dielectric fluid a plurality of electrical appliances each in a respective appliance slot distributed vertically along, and extending transverse to, a long wall of the tank. The HashRaQ Max directly infringes this limitation as the HashRaQ Max is a tank adapted to Bitcoin mining computers, which by definition are electrical appliances, in dielectric fluid. The HashRaQ Max affixes these computers in a set of spaces (slots), which are oriented transverse to the long wall of the tank. Alternatively, the HashRaQ Max infringes this limitation under the doctrine of equivalents as computers are equivalent to an electrical appliance, and the computers

Claim Element(s)	Where Found in Accused Instrumentalities
long wall of the tank, the tank comprising:	are arranged and secured such that each sits in a space (slot) that allows fluid to flow between computers. 
i. A weir, integrated horizontally into the long wall of the tank adjacent all appliance slots, having an overflow lip adapted to facilitate substantially uniform recovery of the dielectric fluid flowing through each appliance slot; and;	Below is an image of the HashRaQ depicting a weir located under the Power Dispersion Units along the center walls of the interior of the tank. This weir is adjacent to all appliance slots and adapted to allow for substantially uniform recovery of the dielectric fluid flowing through the appliance slots. The weir is indicated by red arrows and is a metal wall in the tank which separates the fluid from the overflow reservoir. This can be seen in the image below: 

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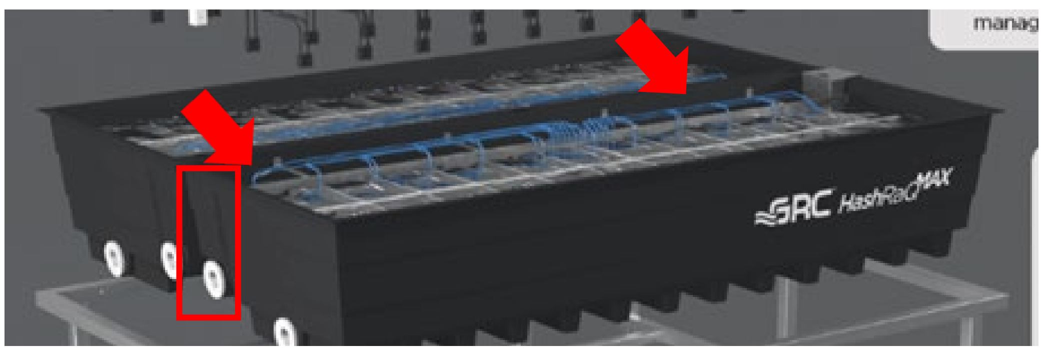
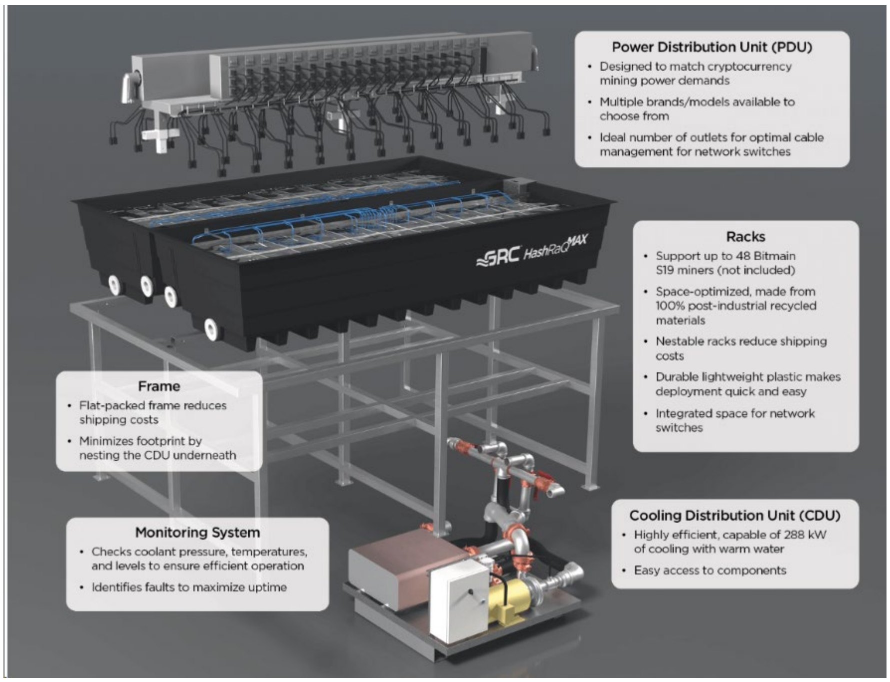
<table>
<tr><th>Claim Element(s)</th><th>Where Found in Accused Instrumentalities</th></tr>
<tr><td></td><td>The HashRaQ Max directly infringes this limitation for the reasons identified above.

Alternatively, the HashRaQ Max infringes this limitation under the doctrine of equivalents as the mesh described above is integrated into the long sidewall of the tank for the purpose of enabling dielectric fluid to pass through and fall by gravity into a receiving reservoir. In this way, the mesh acts as an overflow lip above a gravity fed dielectric fluid recovery reservoir. This has an equivalent function as the weir as claimed and operates by allowing warmer dielectric fluid to flow by gravity from the tank, thereby enabling removal of heat from the computers while keeping the computers fully immersed. The mesh has openings that act as an overflow lip to allow warmed fluid to uniformly flow from the tank into the reservoir.</td></tr>
<tr><td>ii. A dielectric fluid recovery reservoir positioned vertically beneath the overflow lip of the weir and adapted to receive the dielectric fluid as it flows over the weir;</td><td>Below is an image of the HashRaQ depicting a fluid recovery reservoir which are depicted underneath the power distribution units and cable management system. The reservoir has pipes exiting the tank near the center of the unit. The fluid recovery reservoir is indicated by a red rectangle and arrows in the image below:


The HashRaQ Max directly infringes this limitation as set forth herein.

Alternatively, the HashRaQ Max infringes this limitation under the doctrine of equivalents as the mesh described above is integrated into the long sidewall of the tank for enabling dielectric fluid to pass through and fall by gravity into a structure that is equivalent to a receiving reservoir. This has an equivalent function as the recovery reservoir as claimed and operates by receiving dielectric fluid by a gravity flow and allowing a pump to move fluid from the reservoir for cooling and then recirculation in the tank.</td></tr>
</table>

<table>
<tr><th>Claim Element(s)</th><th>Where Found in Accused Instrumentalities</th></tr>
<tr><td>b. A primary circulation facility adapted to circulate the dielectric fluid through the tank, comprising:</td><td>Below is an image of the HashRaQ indicating that the image contains a cooling distribution unit, which circulates the hot fluid flowing form the tank through the cooling system, and then circulates the cool fluid back through the tank. This meets the claim limitation of a primary circulation facility.



</td></tr>
</table>

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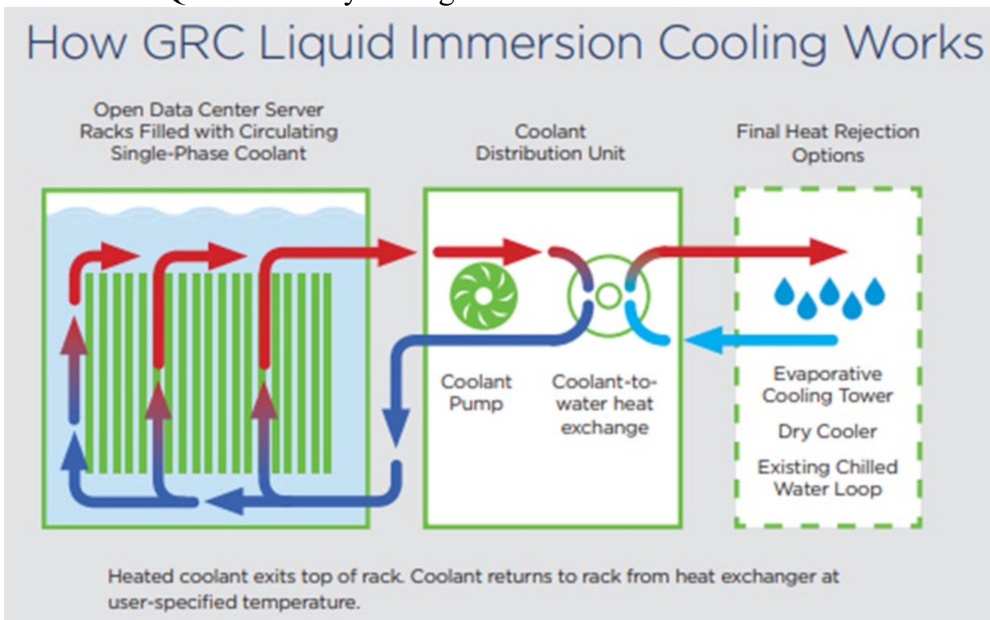
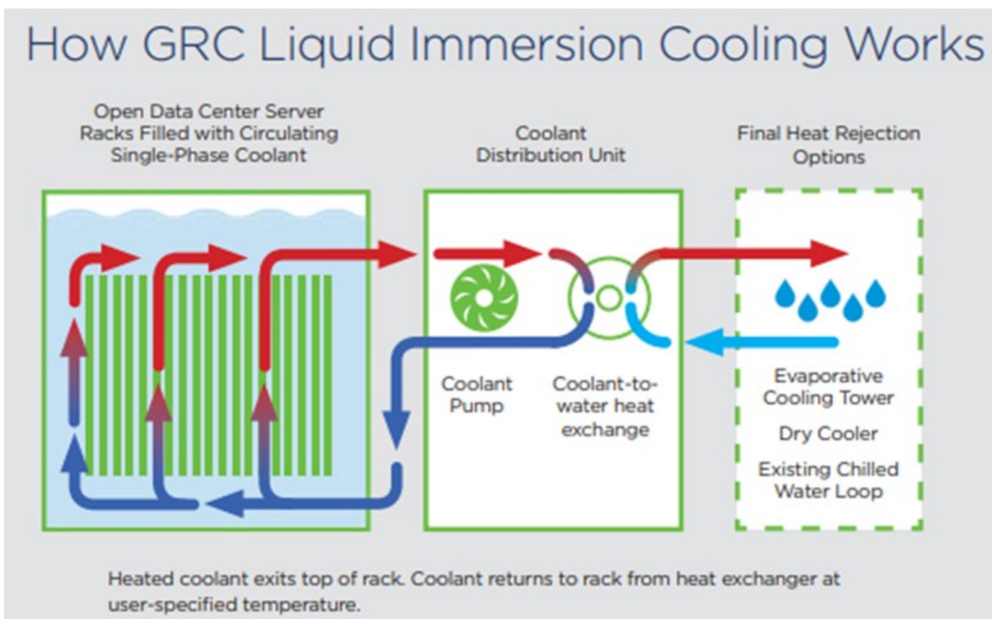
Claim Element(s)	Where Found in Accused Instrumentalities
	Below is an infographic that shows the operation of the cooling distribution unit. The HashRaQ Max directly infringes this limitation as set forth herein.  Alternatively, the HashRaQ Max infringes this limitation under the doctrine of equivalents because the HashRaQ Max contains a fully integrated coolant distribution unit or CDU. This CDU is fed by the pump(s) of the HashRaQ Max move heated fluid from the recovery reservoir for cooling in a heat exchanger, and then recirculate the cooled fluid back into the tank. These two systems are managed by the intelligent controls.

Claim Element(s)	Where Found in Accused Instrumentalities
i. A plenum, positioned adjacent the bottom of the tank, adapted to dispense the dielectric fluid substantially uniformly upward through each appliance slot; and	Below is an image of the HashRaQ which depicts a plenum positioned adjacent the bottom of the tank, adapted to dispense the dielectric fluid substantially uniformly upward through each appliance slot.  The HashRaQ Max directly infringes this limitation as set forth herein. Alternatively, the HashRaQ Max infringes this limitation under the doctrine of equivalents as the structure is substantially at the bottom of the tank and is

Claim Element(s)	Where Found in Accused Instrumentalities
	constructed to enable cooled fluid to flow upwardly through the computers, thereby allowing the computers to transfer heat to the rising fluid. The warmed fluid is then removed from the top of tank over the weir structure as previously described.
c. A control facility adapted to control the operation of the primary fluid circulation facility as a function of the temperature of the dielectric fluid in the tank.	The HashRaQ has a Coolant Distribution Unit that operates as a control facility. This is confirmed below in a HashRaQ Max information sheet under monitoring and reporting. This information sheet details a control system adapted to control the operation of the primary and secondary circulation facilities as a function of the temperature of the dielectric fluid in the tank. The HashRaQ Max directly infringes this limitation as set forth herein. Alternatively, the HashRaQ Max infringes this limitation under the doctrine of equivalents as the HashRaQ Max is designed to maintain the computers at a proper temperature, and uses electrically controlled coolant distribution unit, pumps and heat dispersion units to move dielectric fluid from the heat exchanger throughout the tank, and the water or water/glycol solution to the heat dispersion unit for cooling. 

Claim Element(s)	Where Found in Accused Instrumentalities

HashRaQ MAX

General Product Specifications

Number of Immersion-Cooled Racks	2
Total Miner Capacity	48 Bitmain S19 miners
Number of CDUs per Double-Capacity Rack	1[3]
Total Cooling Capacity	
Chiller-Free Water: 40°C (104°F)	288 kW[4]
Over-Clocking Capability	6 kW/miner[5]
pPUE[6]	<1.02
Standard PDU Details	
Quantity	Four
Outlets	24 C19 each
Architecture	Basic
Circuit Breaker Amps	160A each
Alternate PDUs Available	
Overall Dimensions (L x W x H)	2.85 m x 1.97 m x 1.55 m (9.4 ft x 6.5 ft x 5.1 ft)
Estimated Component Weights	
Racks, CDU, and Stand	227 kg (500 lbs)
Coolant	860 kg (1894 lbs)
Estimated Weight When Commissioned[7]	1950 kg (4300 lbs)

Power and Water

Final Heat Rejection Options	Flexible options can include: Adiabatic/evaporative cooling tower; Dry cooler[8]
Water Requirements	Maximum particulate size 0.8 mm[9]; Input temperature 40°C (104°F); Recirculating flow 29.5 m³/hr (130 gpm); 6 to 9°C dT (10 to 15°F dT); Connection 73.0 mm (2.5") male Victaulic
CDU Power Requirements	1x 3PH 460VAC 60hz, max power consumption 3.7kW
PDU Power Requirements	4x 160A 415Y/240VAC[10]

Monitoring and Reporting

Platform	IoT with Modbus TCP/IP for BMS interface
Alerting	Alerts via DCIM platform
DCIM/BMS Integration Protocols	Modbus
Measurements and Fault Detection	Operating temperatures of coolant and water; Coolant pressure; Coolant levels

Site Requirements

Client provides	Access to power and recirculating water[11]; Secondary containment; Level surface (slab or raised floor) with slope <1/650; Standard data center fire suppression as required
Operating Environment	Ambient temperature 5 to 45°C (40 to 113°F)

Delivery and Installation

Lead Time	Typically ships within 12 weeks after receipt of purchase order.
Shipping Terms	Ex-Works
On-site Installation and Training[12]	One business day per unit

Warranty

Includes 90-day limited warranty against defects in material and workmanship with limited support. Annual monitoring plans	Other plans available for additional cost: Full year limited warranties and support plans; Annual maintenance plans

[3] An additional spare CDU available for additional cost.
[4] CDU is designed for up to 288 kW (6 kW per miner). Actual cooling capacity will depend on end user's specified level of overclocking, as well as final heat rejection system.
[5] Over-clocking greater than 6 kW/miner may require colder/chilled water.
[6] General specification assuming 6 kW/miner. Values will change if end user utilizes less over-clocking.
[7] Includes coolant, mining equipment, cables, and cords. Actual weight depends on configuration.
[8] System cooling performance dependent on climate.
[9] Failures resulting from particulates exceeding 0.8mm or poor water quality will void warranty.
[10] One input power feed per PDU.
[11] GRC and HTS can assist in heat rejection design/implementation.
[12] Installation applies to installing the rack in the data center space only and does not include installation of digital asset mining equipment.

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